

119 Sequence Listing.ST25
SEQUENCE LISTING

<110> Sung, Moon-Hee
Poo, Ha Ryoung
Lee, Jong-Soo
Jung, Chang-Min
Hong, Seong-Pyo
Kim, Chul-Joong
Park, Sue-nie
Pyo, Hyun-mi

<120> VECTOR FOR ANTI-HPV VACCINE AND TRANSFORMED MICROORGANISM BY THE VECTOR

<130> 4240-119

<140> Not yet assigned

<141> 2005-04-01

<150> KR 10-2002-0063378

<151> 2002-10-17

<160> 11

<170> PatentIn version 3.2

<210> 1

<211> 1182

<212> DNA

<213> Bacillus subtilis

<400> 1

```

atgggctggt tactcattat agcctgtgct gtcatactgg tcatcggaat attagaaaaa    60
cgacgacatc agaaaaacat tgatgccctc cctgttcggg tgaatattaa cggcatccgc    120
ggaaaatcga ctgtgacaag gctgacaacc ggaatattaa tagaagccgg ttacaagact    180
gttggaaaaa caacaggaac agatgcaaga atgatttact gggacacacc ggaggaaaag    240
ccgattaaac ggaaacctca ggggccgaat atcggagagc aaaaagaagt catgagagaa    300
acagtagaaa gaggggctaa cgcgattgtc agtgaatgca tggctgttaa cccagattat    360
caaatcatct ttcaggaaga acttctgcag gccaatatcg gcgtcattgt gaatgtttta    420
gaagaccata tggatgtcat ggggccgacg cttgatgaaa ttgcagaagc gtttaccgct    480
acaattcctt ataatggcca tcttgtcatt acagatagtg aatataccga gttctttaaa    540
caaaaagcaa aagaacgaaa cacaaaagtc atcattgctg ataactcaaa aattacagat    600
gagtattttac gtaattttga atacatggta ttccctgata acgcttctct ggcgctgggt    660
gtggctcaag cactcggcat tgacgaagaa acagcattta agggaatgct gaatgcgccg    720
ccgatccggg gagcaatgag aattcttccg ctgatcagtc cgagcgagcc tgggcacttt    780
gttaatgggt ttgccgcaaa cgacgcttct tctactttga atatatggaa acgtgtaaaa    840
gaaatcggtt acccgaccga tgatccgacg atcatcatga actgccgcgc agaccgtgtc    900
gatcggacac agcaattcgc aaatgacgta ttgccttata ttgaagcaag tgaactgac    960
ttaatcggtg aaacaacaga accgatcgta aaagcctatg aagaaggcaa aattcctgca   1020
gacaaaactgc atgacctaga gtataagtca acagatgaaa ttatggaatt gttaaagaaa   1080
agaatgcaca accgtgtcat atatggcgtc ggcaatattc atggtgccgc agagccttta   1140

```

119 Sequence Listing.ST25

attgaaaaaa tccacgaata caaggtaaag cagctcgtaa gc 1182

<210> 2
 <211> 447
 <212> DNA
 <213> Bacillus subtilis

<400> 2
 atgttcgat cagatttata catcgacta attttaggtg tactactcag ttttaattttt 60
 gcggaaaaaa cagggatcgt gccggcagga cttgttgtag cgggatattt aggacttggtg 120
 tttaatcagc cggctctttat tttacttggt ttgctagtga gcttgctcac ttatgttatc 180
 gtgaaatacg gtttatccaa atttatgatt ttgtacggac gcagaaaatt cgctgccatg 240
 ctgataacag ggatcgtcct aaaaatcgcg tttgattttc tatacccgat tgtaccattt 300
 gaaatcgcag aatttcgagg aatcggcatc atcgtgccag gtttaattgc caataccatt 360
 cagaaacaag gttaaccat tacgttcgga agcacgctgc tattgagcgg agcgaccttt 420
 gctatcatgt ttgtttacta ctttaatt 447

<210> 3
 <211> 1140
 <212> DNA
 <213> Bacillus subtilis

<400> 3
 atgaaaaaag aactgagctt tcatgaaaag ctgctaaagc tgacaaaaaa gcaaaaaaag 60
 aaaaccaata agcacgtatt tattgccatt ccgatcgttt ttgtccttat gttcgctttc 120
 atgtgggagg gaaaagcggg aacgccgaag gtcaaaacgt attctgacga cgtactctca 180
 gcctcatttg taggcgatat tatgatggga cgctatgttg aaaaagtaac ggagcaaaaa 240
 ggggcagaca gtatttttca atatgttgaa ccgatcttta gagcctcggg ttatgtagca 300
 ggaaactttg aaaacccggg aacctatcaa aagaattata aacaagcaga taaagagatt 360
 catctgcaga cgaataagga atcagtgaag gtcttgaagg atatgaattt cacggttctc 420
 aacagcgcca acaaccacgc aatggattac ggcgttcagg gcatgaaaga tacgcttgga 480
 gaatttgcca agcaaaacct tgatatcggt ggagcgggat acagcttaag tgatgcgaaa 540
 aagaaaattt cgtaccagaa agtcaacggg gtaacgattg caacgcttgg ctttaccgat 600
 gtgtccggga aaggtttcgc ggctaataaag aatacgccgg gcgtgctgcc cgcagatcct 660
 gaaatcttca tccctatgat ttcagaagcg aaaaaacatg ctgacattgt tgttgtagcag 720
 tcacactggg gccaaagagta tgacaatgat ccaaacgacc gccagcgcca gcttgcaaga 780
 gccatgtctg atgcgggagc tgacatcatc gtcggccatc atccgcacgt cttagaaccg 840
 attgaagtat ataacggaac cgtcattttc tacagcctcg gcaactttgt ctttgaccaa 900
 ggctggacga gaacaagaga cagtgcactg gttcagtatc acctgaagaa aaatggaaca 960
 ggccgctttg aagtgcacac gatcgatatc catgaagcga cacctgcacc tgtgaaaaaa 1020
 gacagcctta aacagaaaac cattattcgc gaactgacga aagactctaa tttcgcttgg 1080
 aaagtagaag acggaaaact gacgtttgat attgatcata gtgacaaact aaaatctaaa 1140

119 Sequence Listing.ST25

<210>	4	
<211>	26	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Synthetic Construct	
<400>	4	
	cgcggatcct ctctttggct gcctag	26
<210>	5	
<211>	31	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Synthetic Construct	
<400>	5	
	ggaaagcttt tattacagct tacgtttttt g	31
<210>	6	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Synthetic Construct	
<400>	6	
	cgcggatccc caggaggtat gcat	24
<210>	7	
<211>	29	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Synthetic Construct	
<400>	7	
	ggaaagcttt tatggtttct gagaacaga	29
<210>	8	
<211>	29	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Synthetic Construct	
<400>	8	
	ctgggatccc aaggtatggt gcccgtttg	29
<210>	9	
<211>	30	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Synthetic Construct	
<400>	9	

119 Sequence Listing.ST25

tgaagcttat taggacgatg ggatgggaat

30

<210> 10

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 10

gcacatatgt tcggatcaga tttatacatc

30

<210> 11

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 11

ctcggatcct ttagatttta gtttgcact

30

Sequence Listing

<110> BIOLEADERS CORPORATION
 KOREA RESEARCH INSTITUTE OF BIOSCIENCE AND BIOTECHNOLOGY
 SUNG, Moon-Hee
 POO, Ha-Ryoung
 LEE, Jong-Soo
 JUNG, Chang-Min
 HONG, Seung-Pyo
 KIM, Chul-Joong
 PARK, Sue-nie
 PYO, Hyun-mi

<120> VECTOR FOR ANTI-HPV VACCINE AND TRANSFORMED MICROORGANISM BY THE VECTOR

<130> E03-004

<150> KR10-2002-0063378
 <151> 2002-10-17

<160> 11

<170> KopatentIn 1.71

<210> 1
 <211> 1182
 <212> DNA
 <213> Bacillus subtilis

<400> 1
 atgggctggt tactcattat agcctgtgct gtcatactgg tcatcggaat attagaaaaa 60
 cgacgacatc agaaaaacat tgatgccctc cctgttcggg tgaatattaa cggcatccgc 120
 ggaaaatcga ctgtgacaag gctgacaacc ggaatattaa tagaagccgg ttacaagact 180
 gttggaaaaa caacaggaac agatgcaaga atgatttact gggacacacc ggaggaaaag 240
 ccgattaaac ggaaacctca ggggccgaat atcggagagc aaaaagaagt catgagagaa 300
 acagtagaaa gaggggctaa cgcgattgtc agtgaatgca tggtgtttaa cccagattat 360

Sequence Listing

```

caaatcatct ttcaggaaga acttctgcag gccaatatcg gcgtcattgt gaatgtttta      420
gaagaccata tggatgtcat ggggccgacg cttgatgaaa ttgcagaagc gtttaccgct      480
acaattcctt ataatggcca tcttgtcatt acagatagtg aatataccga gttcttttaa      540
caaaaagcaa aagaacgaaa cacaaaagtc atcattgctg ataactcaa aattacagat      600
gagtatttac gtaattttga atacatggta ttccctgata acgcttctct ggcgctgggt      660
gtggctcaag cactcggcat tgacgaagaa acagcattta agggaatgct gaatgcgccg      720
ccagatccgg gagcaatgag aattcttccg ctgatcagtc cgagcgagcc tgggcacttt      780
gttaatgggt ttgccgcaa cgacgcttct tctactttga atatatggaa acgtgtaaaa      840
gaaatcggtt acccgaccga tgatccgata atcatcatga actgccgcgc agaccgtgtc      900
gatcggacac agcaattcgc aaatgacgta ttgccttata ttgaagcaag tgaactgac      960
ttaatcggtg aaacaacaga accgatcgta aaagcctatg aagaaggcaa aattcctgca     1020
gacaaactgc atgacctaga gtataagtca acagatgaaa ttatggaatt gttaaagaaa     1080
agaatgcaca accgtgtcat atatggcgtc ggcaatatc atggtgccgc agagccttta     1140
attgaaaaaa tccacgaata caaggtaaag cagctcgtaa gc                          1182

```

<210> 2

<211> 447

<212> DNA

<213> Bacillus subtilis

<400> 2

```

atgttcggat cagatttata catcgacta attttaggtg tactactcag ttttaatttt      60
gcggaaaaaa cagggatcgt gccggcagga cttgtgttac cgggatattt aggacttgtg     120

```

Sequence Listing

tttaatcagc cggctctttat ttacttgtt ttgctagtga gcttgctcac ttatgttata	180
gtgaaatacg gtttatccaa atttatgatt ttgtacggac gcagaaaatt cgctgccatg	240
ctgataacag ggatcgtcct aaaaatcgcg ttgtatttc tataccogat tgtaccattt	300
gaaatcgcag aatttcgagg aatcggcatc atcgtgccag gtttaattgc caataccatt	360
cagaaacaag gttaaccat tacgttcgga agcacgctgc tattgagcgg agcgacctt	420
gctatcatgt ttgtttracta cttaatt	447

<210> 3
 <211> 1140
 <212> DNA
 <213> *Bacillus subtilis*

<400> 3 atgaaaaaag aactgagctt tcatgaaaag ctgctaagc tgacaaaaca gcaaaaaaag	60
aaaaccaata agcacgtatt tattgccatt ccgacgttt ttgtccttat gttcgcttcc	120
atgtgggcgg gaaaagcgga aacgccgaag gtcaaacgt attctgacga cgtactctca	180
gcctcatttg taggcgatat tatgatggga cgtatgttg aaaaagtaac ggagcaaaaa	240
ggggcagaca gtatTTTTCA atatgttgaa ccgacttcta gagcctcgga ttatgtagca	300
ggaaactttg aaaacccggt aacctatcaa aagaattata aacaagcaga taaagagatt	360
catctgcaga cgaataagga atcagtgaag gtcttgaagg atatgaattt cacggttctc	420
aacagcgcca acaaccacgc aatggattac ggcgttcagg gcatgaaaga tacgcttgga	480
gaatttgoga agcaaaacct tgatatcgtt ggagcgggat acagcttaag tgatgcgaaa	540
aagaaaattt cgtaccagaa agtcaacggg gtaacgattg caacgcttgg ctttaccgat	600
gtgtccggga aaggtttcgc ggctaaaaag aatacgccgg gcgtgctgcc cgcagatcct	660

Sequence Listing

gaaatcttca tccctatgat ttcagaagcg aaaaaacatg ctgacattgt tgttgtgcag	720
tcacactggg gccaaagagta tgacaatgat ccaaacgacc gccagcgcca gcttgcaaga	780
gccatgtctg atgcgggagc tgacatcatc gtcggccatc atccgcacgt cttagaaccg	840
attgaagtat ataacggaac cgtcattttc tacagcctcg gcaactttgt ctttgaccaa	900
ggctggacga gaacaagaga cagtgcactg gttcagtatc acctgaagaa aaatggaaca	960
ggcgcgtttg aagtgcaccc gatcgatatc catgaagcga cacctgcacc tgtgaaaaaa	1020
gacagcctta aacagaaaac cattattcgc gaactgacga aagactctaa tttcgcttgg	1080
aaagtagaag acggaaaact gacgtttgat attgatcata gtgacaaact aaaatctaaa	1140
	1140

<210> 4
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<400> 4	
cgcgatcct ctctttggct gcctag	26

<210> 5
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

Sequence Listing

<400> 5
ggaaagcttt tattacagct tacgtttttt g 31

<210> 6
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 6
cgcggatccc caggaggtat gcat 24

<210> 7
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 7
ggaaagcttt tatggtttct gagaacaga 29

<210> 8
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

Sequence Listing

<400> 8
ctgggatccc aaggtatggt gcccgtttg 29

<210> 9
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 9
tgaagcttat taggacgatg ggatgggaat 30

<210> 10
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 10
gcacatatgt tcggatcaga ttatacatc 30

<210> 11
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

Sequence Listing

<400> 11

ctcggatcct ttagatttta gtttgtcact

30